

### **REMARKS**

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Final Office Action dated February 24, 2010 has been received and its contents carefully reviewed.

Claim 1 is hereby amended. Claims 23-24 are canceled without prejudice or disclaimer. Claim 33 is newly added. Support the claim amendment and new claim can be found, for example, at *Specification*, page 12, lines 14-15, and page 14, lines 14-15 and 28-29. No new matter has been added. Accordingly, claims 1-22 and 25-33 are currently pending, of which claims 25-32 are withdrawn from consideration. Reexamination and reconsideration of the pending claims are respectfully requested.

The Office Action objects to claim 23 as being substantial duplicate of claim 1. To advance prosecution, Applicants have canceled claim 23. Applicants respectfully request withdrawal of the objection to claim 23.

The Office Action rejects claims 1-3, 5, 7-9, 11, 16, 23-25 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,210,894 to Brennan (*Brennan*). Applicants respectfully traverse the rejection.

As required in M.P.E.P. § 2131, in order to anticipate a claim under 35 U.S.C. § 102, “the reference must teach every element of the claim.” *Brennan* fails to teach all the elements of claims 1-3, 5, 7-9, 11, 16, 23-25, and thus cannot anticipate these claims.

Claim 1 recites, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge... the borders are structures in relief.” *Brennan* fails to teach at least this element of claim 1. The Office states that “*Brennan* teaches coating the substrate with a resist and photolithography to remove coating to expose binding sites (Column 2 and Example 1).” *Office Action*, page 12. Applicants respectfully disagree. *Brennan* discloses that “the array plates are made by the [following] process ... (a) coating a support surface with a positive or negative photoresist substrate which is subsequently exposed ... (c) removing the remaining photoresist to

expose a second support surface.” *Brennan*, column 2, lines 30-41, emphasis added. Note that, all the photoresist is removed according the process disclosed in *Brennan*. Different chemical compounds are then linked to the surface of the substrate to create hydrophilic and hydrophobic regions. The present application, as pointed out by the Office Action, provides that “deposition of a material on the surface of a plane substrate, for example by coating, evaporation, spraying or electroplating, followed by etching in combination with a conventional photolithography method, for example by coating with a resist, exposure and definition of features, or etching; direct definition of features by photolithography in photosensitive polymers, for example in the case of photoresists.” *Specification*, page 15, lines 14-23, emphases added. In a photolithography method, only part of the photoresist is removed. See, e.g., *Specification*, page 39, lines 5-9. Thus, the process disclosed in *Brennan* is different from that of the present application. Consequentially, the device of *Brennan* is also different form that of claim 1. Accordingly, claim 1 is allowable over *Brennan*. Claims 2-3, 5, 7-9, 11, 16, 23-25 variously depend from claim 1, and are also allowable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the rejection of claims 1-3, 5, 7-9, 11, 16, 23-25.

Newly added independent claim 33 recites, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge... the borders are structures in relief.” Claim 33 is allowable over *Brennan* for at least the same reasons as claim 1. Claim 33 also recites, “structures in relief presenting a height above the active surface between 5 and 20  $\mu\text{m}$ .” *Brennan* also fails to teach or suggest this element of claim 33. In fact, *Brennan* is completely silent with respect to the height of the structures in relief. Thus, claim 33 is allowable over *Brennan* for this additional reason.

The Office Action rejects claims 4 and 12-15 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of U.S. Patent No. 6,017,696 to Heller (*Heller*). Applicants respectfully traverse the rejection.

To establish *prima facie* obviousness of a claimed invention, all the elements of the claim must be taught or suggested by the prior art. The combined teaching of *Brennan* and

*Heller* fails to teach or suggest all the elements of claims 4 and 12-15, and thus cannot render these claims obvious.

Claims 4 and 12-15 variously depend from claim 1, and incorporate all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge... the borders are structures in relief.” *Heller* does not cure the deficiency of *Brennan*. The Office Action cites *Heller* for disclosing “the substrate comprises an organic polymer and metal and wherein the work zone has a rectangular/square shape.” *Office Action*, page 7. *Heller* is also silent with respect to the above-recited elements of claim 1. Accordingly, claim 1 and its dependent claims 4 and 12-15 are allowable over the combined teaching of *Brennan* and *Heller*. Applicants, therefore, respectfully request withdrawal of the rejection of claims 4 and 12-15.

The Office Action rejects claim 6 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of *Heller*, and further in view of U.S. Patent No. 5,582,697 to Ikeda et al. (*Ikeda*). Applicants respectfully traverse the rejection.

Claim 6 depends from claim 1, and incorporates all the elements of claim 1. As discussed, the combined teaching of *Brennan* and *Heller* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge... the borders are structures in relief.” *Ikeda* does not cure the deficiency of *Brennan* and *Heller*. The Office Action only cites *Ikeda* for disclosing a biosensor wherein the sample detection occurs via electrode actuator. *Office Action*, page 8. *Ikeda* is also silent with respect to the above-recited elements of claim 1. Accordingly, claim 1 and its dependent claim 6 are allowable over the combined teaching of *Brennan*, *Heller*, and *Ikeda*. Applicants, therefore, respectfully request withdrawal of the rejection of claim 6.

The Office Action rejects claim 10 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of U.S. Patent No. 5,959,098 to Goldberg et al. (*Goldberg*). Applicants respectfully traverse the rejection.

Claim 10 depends from claim 1, and incorporates all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge... the borders are structures in relief.” *Goldberg* does not cure the deficiency of *Brennan*. The Office Action cites *Goldberg* for disclosing non-wetting blank zone. *Office Action*, page 9. *Goldberg* is also silent with respect to the above-recited elements of claim 1. Accordingly, claim 1 and its dependent claim 10 are allowable over the combined teaching of *Brennan* and *Goldberg*. Applicants, therefore, respectfully request withdrawal of the rejection of claim 10.

The Office Action rejects claims 12 and 17 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of *Papkovsky*. Applicants respectfully traverse the rejection.

Claims 12 and 17 variously depend from claim 1, and incorporate all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge... the borders are structures in relief.” *Papkovsky* does not cure the deficiency of *Brennan*. The Office Action cites *Papkovsky* for disclosing patterning by stamping or moulding. *Office Action*, page 9. Accordingly, claim 1 and its dependent claims 12 and 17 are allowable over the combined teaching of *Brennan* and *Papkovsky*. Applicants, therefore, respectfully request withdrawal of the rejection of claims 12 and 17.

The Office Action rejects claims 18-22 under 35 U.S.C. §103(a) as being unpatentable over *Brennan* in view of U.S. Patent Application Publication No. 2002/0168624 to Yuen (*Yuen*). Applicants respectfully traverse the rejection.

Claims 12 and 17 variously depend from claim 1, and incorporate all the elements of claim 1. As discussed, *Brennan* fails to teach or suggest at least the above-recited elements of claim 1, namely, “a plurality of distinct work zones (Zt) formed on said active surface and each surrounded by a border (b) formed on said active surface that is substantially non-wetting for the liquid of interest, the borders not touching one another and having no common edge... the borders are structures in relief.” *Yuen* does not cure the deficiency of *Brennan*. The Office Action cites *Yuen* for disclosing a pump and vacuum is attached to evacuate or purge the chamber. *Office Action*, page 10. *Yuen* is also silent with respect to the above-recited elements of claim 1. Accordingly, claim 1 and its dependent claims 12 and 17 are allowable over the combined teaching of *Brennan* and *Yuen*. Applicants, therefore, respectfully request withdrawal of the rejection of claims 12 and 17.

The Office Action provisionally rejects claims 1-25 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-40 of copending Application 10/576,345. Applicants respectfully disagree. As this is provisional rejection and both applications are pending, Applicants reserve the right to further address the double patenting rejection upon indication of allowability.

Applicants believe the application in condition for allowance and early, favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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